WHAT IS CLAIMED IS:

1. A high electron mobility transistor comprising:

a GaN-based electron accumulation layer formed on a substrate;

an electron supply layer formed on the electron accumulation layer;

a source electrode and a drain electrode formed on the electron supply layer and spaced from each other;

a gate electrode formed on the electron supply layer between the source and the drain electrode; and

a hole absorption electrode formed on the electron accumulation layer so as to be substantially spaced from the electron supply layer.

2. The high electron mobility transistor according to claim 1, wherein the hole absorption electrode is formed on the electron accumulation layer via a semiconductor layer having a smaller bandgap width than that of the electron accumulation layer.

3. The high electron mobility transistor according to claim 1, wherein the hole absorption electrode is formed on the electron accumulation layer via a p-type semiconductor layer.

4. The high electron mobility transistor according to claim 1, wherein the hole absorption electrode is formed of the same material as used in

the gate electrode.

5. The high electron mobility transistor according to claim 1, wherein a composition of the electron supply layer is AlGaN.

6. The high electron mobility transistor according to claim 1, wherein the source electrode is formed between the hole absorption electrode and the gate electrode.

7. The high electron mobility transistor according to claim 1, wherein the hole absorption electrode is formed in parallel with the gate electrode in a gate width direction and having substantially the same length as that of the source electrode in the gate width direction.

8. A high electron mobility transistor comprising:

an electron accumulation layer formed on a substrate;

an electron supply layer formed on the electron accumulation layer and generating a piezoelectric polarization charge of 1×10^{-7} C/Cm^2 between the electron accumulating layer and the electron supply layer;

a source electrode and a drain electrode formed on the electron supply layer and spaced form each other;

a gate electrode formed on the electron supply

layer between the source and the drain electrode; and

a hole absorption electrode formed on the electron accumulation layer so as to substantially spaced from the electron supply layer.

9. The high electron mobility transistor according to claim 8, wherein the hole absorption electrode is formed on the electron accumulation layer via a semiconductor layer having a smaller bandgap width than that of the electron accumulation layer.

10. The high electron mobility transistor according to claim 8, wherein the hole absorption electrode is formed on the electron accumulation layer via a p-type semiconductor layer.

11. The high electron mobility transistor according to claim 8, wherein the hole absorption electrode is formed of the same material as that of the gate electrode.

12. The high electron mobility transistor according to claim 8, wherein the source electrode is formed between the hole absorption electrode and the gate electrode.

13. The high electron mobility transistor according to claim 12, wherein the hole absorption electrode is formed in parallel with the gate electrode in a gate width direction and has substantially the same length as that of the source electrode in the gate width direction.

14. A method of manufacturing a high electron mobility transistor, comprising

a first step of laminating an electron accumulation layer and an electron supply layer successively on a substrate;

a second step of selectively removing the electron supply layer to isolate an element region;

a third step of forming a source and a drain electrode on the electron supply layer of the isolated element region; and

a fourth step of forming a hole absorption electrode on the element accumulation layer exposed by the selective removal of the electron supply layer, and simultaneously forming a gate electrode on the electron supply layer of the isolated element region.

15. The method of manufacturing a high electron mobility transistor according to claim 14, wherein the fourth step includes a step of forming the hole absorption electrode on the electron accumulation layer via a semiconductor layer having a smaller bandgap width than that of the element accumulation layer.

16. The method of manufacturing a high electron mobility transistor according to claim 14, wherein the fourth step includes a step of forming the hole absorption electrode on the electron accumulation layer via a p-type semiconductor layer.

17. The method of manufacturing a high electron

mobility transistor according to claim 14, wherein the fourth step includes a step of forming the hole absorption electrode adjacent to the source electrode.

18. The method of forming a high electron mobility transistor according to claim 17, wherein the fourth step includes a step of forming the hole absorption electrode in parallel with the gate electrode in a gate width direction and having the substantially the same length as that of the source electrode in the gate width direction.